

How sexual contacts with outsiders contribute to HIV infections within communities

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While a number of strategies can prevent and control HIV transmission and spread, their effective use depends on understanding the sexual networks within and between communities. A paper published in this week's *PLOS Medicine* reports a detailed analysis with surprising results from the Rakai district in Uganda, one of the most studied areas of the HIV/AIDS epidemic in Africa.

Mary K. Grabowski, from Johns Hopkins Bloomberg School of Public Health, led an international group of scientists in an effort to test the hypothesis that most people who contract HIV outside their household are infected through sex with someone from their local community. However, studying 46 communities within the Rakai district in Uganda, the researchers found that introductions of HIV from outside the community are frequent and seem to contribute substantially to sustaining the HIV epidemic within the community. While the largest fraction of new infections take place within a household, the majority of new infections outside of the household appear to be contracted by sexual contact with partners from outside the community.

Some of the data rely on the accuracy of self-reported sexual partnerships, but the findings were consistent between three different approaches the scientists used to examine the question. And while it is not known whether the situation in communities outside of Rakai is similar, these results suggest that HIV infections by sexual partners from

outside the community are common, and that HIV prevention campaigns need to look beyond communities.

More information: Grabowski MK, Lessler J, Redd AD, Kagaayi J, Laeyendecker O, et al. (2014) The Role of Viral Introductions in Sustaining Community-Based HIV Epidemics in Rural Uganda: Evidence from Spatial Clustering, Phylogenetics, and Egocentric Transmission Models. PLoS Med 11(3): e1001610. [DOI: 10.1371/journal.pmed.1001610](https://doi.org/10.1371/journal.pmed.1001610)

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